

STATEMENT OF BASIS

For Proposed Permit Limits (Permit Renewal)

PERMITTEE: Town of Grass Range
PERMIT NO.: MT0030309

RECEIVING WATER: South Fork McDonald Creek

FACILITY INFORMATION:

Mailing Address: P.O. Box 807
Grass Range, MT 59032-0807

Contact: Betty Deeney, Clerk/Treasurer

Telephone: (406) 428-2174

FEE INFORMATION

Number of Outfalls: one (1)
Type of Outfall: 001 - Treated domestic wastewater

I. Permit Status

This is a renewal of Montana Pollutant Discharge Elimination System (MPDES) permit for the Town of Grass Range wastewater treatment lagoon. The previous MPDES permit was issued on September 1, 1996 and expired at midnight June 30, 2001. A minor modification to the permit was made in January 1999 to reflect a reduction in self-monitoring requirements for nutrients and receiving water quality monitoring. An application for permit renewal and accompanying fees were submitted in January 2001 to the Department of Environmental Quality (Department). The application was considered complete in November 2002.

II. Facility Information

a. Facility Description

The permittee operates a two-celled facultative lagoon system (Figure 1). The collection system is entirely gravity fed. The lagoons and sewer lines were new in 1973; prior to that, residents and businesses had individual septic systems. The facility was designed to serve a population of 250 and has an average design flow of 0.038 mgd (Mueller Engineering, Inc., 1973). The facility was designed to operate in either series or parallel.

Redwood stop blocks are used to control effluent flow. Discharge can occur from either cell. Discharge is measured from a manhole located approximate 130 feet downstream of the effluent

control structure. A V-notch weir and staff gauge are used to measure effluent discharge. The facility does not have disinfection capabilities. A design summary is provided in Table 1.

Table 1: Current Design Criteria Summary (Source: Mueller Engineering, Inc. 1973)	
Facility Description:	
2-celled facultative lagoon	
Construction Date: 1973	Modification Date: NA
Design Population: 250	Current Population: 149 (2000 Census)
Design Flow, Average (mgd): 0.038	Design Flow, Maximum Day (mdg): 0.068
Primary Cells: 2	Secondary Cells: NA
Number Aerated Cells: NA	Minimum Detention Time-System (days): 162
Design BOD Removal (%): 95 (April-September)	Design BOD Load (lb/day): unknown
Design SS Removal (%): unknown	Design SS Load (lb/day): unknown
Influent Flow (mgd): 0.025	Source: Mueller Engineering (design)
Collection System Combined [] Separate [X]	Estimated I/I: not studied/reported
SSO Events (Y/N): not reported	Bypass Events(Y/N): none reported
Disinfection (Y/N): no	Type: NA
Discharge Method: Controlled	
Sludge Storage: NA	
Sludge Disposal: NA	Permit Number: NA

The average design flow used in Table 1 is from the previous permit. The Operation and Maintenance (O&M) manual did not include a design flow, nor could any engineering documentation be located. The maximum daily flow was calculated by using the recommendation in the O&M manual to not drop the lagoon levels by more than two-inches per day.

At present, the facility is operated as a controlled release. The Operation and Maintenance (O&M) manual states the facility could be operated as a continuously discharging facility during the warmer months (May through September) and hold water during the cooler months. However, from the time it went into operation through April 1996, the facility did not have an MPDES permit and did not report any discharges.

Biosolids (sludge) levels were measured in August 2003. Results showed sludge accumulation on the south ends, as much as two feet deep. The permittee is considering options for a sludge removal plan.

The Department found that the permittee was discharging without an MPDES permit in March 1996. Other issues noted during that visit included an under maintained and uncalibrated flow

measurement device, lacking influent and effluent water quality monitoring, potential leaking lagoons, and cattails and weeds growing along the inner dike. A permit was issued and became effective on September 1, 1996.

On April 21, 1999, the Department completed a compliance inspection and found that effluent was leaking from the east cell at an estimated 1-5 gallons per minute (gpm). The inspector collected and analyzed an effluent sample five-day Biochemical Oxygen Demand (BOD₅) and Total Suspended Solids (TSS). The results were: 48.8 mg/L BOD₅ and 67.3 mg/L TSS. The BOD₅ result was over the 30-day permit limit of 30 mg/L. A letter from the Department stated that if the permittee reported "no discharge" on the monthly DMR, the leak had to be repaired. The permittee was unaware that leakage was considered a discharge. The permittee collected a sample for DMR purposes on April 29, 1999. The DMR data on file for April 1999 reported BOD₅ as 21 mg/L and TSS as 39 mg/L.

Another compliance inspection was completed in November 2002. The facility was not discharging. Signs of cattle use were noted within the lagoon enclosure. A muskrat was noted as residing in the ponds and the operator was actively attempting to control damage.

The most current Department compliance inspection was in January 2005. During the inspection, the Department found that the lagoons could only be operated in series. Inoperable influent valves and interpond control points do not allow the operator to change the operation configuration or isolate one cell from the other. All control piping are permanently set in the open position. To maintain the series operation, a sand bag has been used to plug influent from flowing into the western cell. The piping between the two cells is permanently open. "As-built" drawings indicate redwood stop blocks were installed to control interpond flow. However, the operator reported that a valve exists between the two lagoons and that valve is permanently open as a result of corrosion.

The current operator and mayor spoke of their concerns over the age and disrepair of the facility. Along with the inoperable valving, other signs of a deteriorating facility noted included sludge build-up and limited freeboard on the northern edges of the lagoons.

b. Effluent Characteristics

The facility is operated as a controlled discharge. The decision to discharge has been based upon the need to eliminate volume and the presence of flow in the receiving waters. Data on record show that the facility continuously discharged from February 1998 until March 2001. Since then, discharge has been seasonal and controlled. No discharge has not occurred since June 2003 due to the hydraulic under-loading of the plant and recent drought conditions.

Reported discharge is presented, as gallons per minute (gpm), in Table 2 for a period of record from January 1999 through May 2005.

Table 2 : Summary of Discharge Data							
Month	1999	2000	2001	2002	2003	2004	2005
	30-day Average	30-day Average	30-day Average	30-day Average	30-day Average	30-day Average	30-day Average
January	17.1	17.1	16.5	15.5	ND	ND	ND
February	17.1	16.9	16.5	15.5	ND	ND	ND
March	17.1	17.0	16.4	15.1	ND	ND	ND
April	17.0	17.1	0	12.5	ND	ND	ND
May	17.1	16.9	16.4	14.5	ND	ND	ND
June	17.0	17.7	15.9	14.2	14.2	ND	NR
July	17.0	16.8	15.7	14.2	ND	ND	NR
August	17.0	16.9	16.1	ND	ND	ND	NR
September	16.8	17.0	ND	ND	ND	ND	NR
October	17.0	16.7	ND	ND	ND	ND	NR
November	16.8	16.8	14.6	ND	ND	ND	NR
December	16.9	16.8	15.5	ND	ND	ND	NR
Maximum	17.1	17.7	16.5	15.5	14.2	ND	ND
Minimum	16.8	16.7	14.6	12.5	ND	ND	ND
Footnote: "ND" means no discharge, "NR" means not reported							

The previous permit required the permittee to sample and report, on a monthly basis, influent and effluent flow rates, effluent BOD₅, TSS, fecal coliform bacteria, total phosphorus, total ammonia, nitrate plus nitrite, total Kjeldahl nitrogen, and total nitrogen. Monthly sampling was required for fecal coliform bacteria for discharges occurring April 1 through October 31. Ambient and downstream monitoring of South Fork McDonald Creek was also required. The permittee requested elimination of instream and effluent nutrient monitoring in 1998. The request was granted and a modified permit was issued to the permittee in January 1999.

Effluent data are summarized in Table 3. The period of record is from the issuance of the last permit, September 1996, through March 2005.

Table 3: Effluent Characteristics (Period of Record: September 1996 – May 2005)

Parameter	Units	Previous Permit Limits (7-day/30-day)	Minimum	Maximum	Average	Number of Samples
Flow, Daily Average	mgd	NA	18,000	25,500	23,400	41
BOD ₅	mg/L	45/30	<6	44	19	53
	lbs/day	NA	1.6	9.0	3.6	53
TSS	mg/L	135/100	<10	76	37	40
	lbs/day	NA	0.8 ⁽¹⁾	15.5	7.4	40
Fecal Coliform	No./100ml	3,800 / 1,900	<5	4,800	91 ⁽²⁾	35
Ammonia, as N (winter) ⁽³⁾	mg/L	NA	6.0	19.8	12.3	7
Ammonia, as N (summer) ⁽³⁾	mg/L	NA	<0.1	8.7	3.3	12
Kjeldahl Nitrogen, as N	mg/L	NA	3.8	23.9	10.3	20
Nitrate + Nitrite, as N	mg/L	NA	0.81	0.05	0.24	20
Total Nitrogen	mg/L	NA	4.2	23.9	2.2	20
	lbs/day	NA	0.89	4.82	2.15	20
Total Phosphorus	mg/L	NA	0.5	3.48	2.10	20
	lbs/day	NA	0.11	0.70	0.42	20

(1). For averaging and load calculation, half of the reporting limit was used for values reported as “<10 mg/L”.

(2). Geometric average.

(3) Winter is defined as the period from November 1 through March 31; Summer is the period from April 1 through October 31.

Throughout the previous permit cycle (Sept 1996 to June 2001), the permittee has received violation letters regarding exceedences of BOD₅ limits, high fecal coliform bacteria numbers, and delinquent DMR reporting. In January 1999, a BOD₅ value of 44 mg/L was reported. The permittee submitted a letter stating that abnormally warm weather and frequent winds had created an unanticipated and significant increase in aerobic activity. A second BOD₅ violation occurred for the period of July 1999. A letter from the permittee stated the exceedence might have been caused by an algal bloom, and thought it was an “erratic” value.

Five fecal coliform bacteria results exceeded the 30-day limit of 1,900 colonies/100mL. Various letters on file state that the reasons for exceedence are not understood and may be due to wildlife and/or abnormally warm temperatures. Two DMR violations have been issued from the Department for fecal coliform bacteria effluent limit exceedences. The first was in June 1997 when a fecal coliform sample was reported as 2,000 colonies/100-mL. The second violation letter was sent due to a September 2000 exceedence that was 2,800 colonies/100-mL. A letter from the permittee followed that stated a large number of waterfowl had been using the ponds for several weeks.

III. Proposed Technology-Based Effluent Limits (TBEL)

Limits established in the previous permit applied the secondary treatment standard for BOD₅ and the Alternative State Requirement (ASR) for TSS (Table 3).

The Board of Environmental Review has adopted by reference 40 CFR 133 which sets minimum treatment requirements for secondary treatment or equivalent for publicly owned treatment works (POTW) (ARM 17.30.1209). Secondary treatment is defined in terms of effluent quality as measured by BOD₅, TSS, percent removal of BOD₅ and TSS, and pH. National secondary treatment requirements are described on 40 CFR 133 and incorporated in to all municipal permits.

The secondary treatment requirement may be modified on a case-by-case basis for facilities that are eligible for treatment equivalent to secondary treatment [40 CFR 133.101 (g)] for BOD₅, TSS, and percent removal. To determine if a facility is eligible for TES the facility must meet the requirements of 40 CFR 133.101(g), summarized as follows:

- 1) The 95th percentile of the 30-day BOD and TSS concentrations in a minimum 2-year period, excluding upsets, bypasses, operational errors and unusual conditions [40 CFR 133.101(f)] exceed the minimum levels established for secondary treatment requirement;
- 2) The treatment works utilize a trickling filter or waste stabilization pond; and,
- 3) The treatment works utilizes biological treatment that consistently achieves a 30-day average of at least 65 percent removal [40 CFR 133.101(k)].

In addition to these requirements, the modification may not contribute to an exceedence of water quality standards or exceed the limits established in a permit issued prior to April 29, 1993 unless the Department has completed a nonsignificance determination (See Part IV). Waste stabilization ponds may include common biological treatment systems such as facultative, aerated, or aerobic lagoons.

In addition to TES, permitting agencies may give special consideration to treatment works that employ waste stabilization ponds as the primary method for treating wastes and for system receiving less concentrated influent. Alternative state requirements (ARS) may be applied as limits in permits for lagoon system if historic data indicates that the TES limits in cannot be achieved. The 30-day ASR for TSS in Montana is 100 mg/L and the 7-day limit is 135 mg/L.

The permittee qualifies for:

- 1) National secondary standards for BOD₅. Self-monitoring data provided a 95th percentile value of 28.2 mg/L, showing the facility can meet this limit; and
- 2) Alternative state requirement for TSS. Self-monitoring data provided a 95th percentile value of 63 mg/L. Of the months when TSS was reported, eight values were greater than 45 mg/L, or the 30-day equivalent to secondary limit. Seasonality could not be determined in the data. The facility does not have operational controls to alter the level which treated water can be discharged.

Table 3. Proposed Technology-Based Effluent Limits					
Parameter	Concentration (mg/L) ⁽¹⁾		Load (lbs/day) ⁽¹⁾		Rationale
	7-day Average	30-day Average	7-day Average	30-day Average	
BOD ₅	45	30	14.3	9.5	40 CFR 133.102 (a)
TSS	135	100	42.8	31.7	40 CFR 133.105 (d)
pH (s.u.)	Within the range of 6.0 to 9.0				40 CFR 133.102 (c)
(1) See Part V. of the permit for explanation of terms					

Loads are calculated, using the design flow, as follows:

$$\text{Load (lb/day)} = \text{Design Flow (mgd)} \times \text{Concentration (mg/L)} \times \text{Conversion Factor (8.34)}.$$

BOD:

$$\begin{array}{llll} \text{7-d} & \text{Load} = & 0.038 \text{ mgd} \times 45 \text{ mg/L} \times 8.34 & = & 14.3 \text{ lbs/day} \\ \text{30-d} & \text{Load} = & 0.038 \text{ mgd} \times 30 \text{ mg/L} \times 8.34 & = & 9.5 \text{ lbs/day} \end{array}$$

TSS:

$$\begin{array}{llll} \text{7-d} & \text{Load} = & 0.038 \text{ mgd} \times 135 \text{ mg/L} \times 8.34 & = & 42.8 \text{ lbs/day} \\ \text{30-d} & \text{Load} = & 0.038 \text{ mgd} \times 100 \text{ mg/L} \times 8.34 & = & 31.7 \text{ lbs/day} \end{array}$$

The proposed limits for BOD₅ and TSS are different from the previous permit in that load limits have been developed. Quarterly BOD₅ and TSS influent monitoring will be required during this permit cycle.

Nondegradation

The permit does not authorize a new or increased discharge, as defined in ARM 17.30.702(16), and therefore is not subject to the criteria in ARM 17.30.715(1).

Load allocations are given in Table 4. The previous permit calculated allocated loads based on the facility design. These allocations define baseline allocated loads for the facility. Any increase above this amount is subject to the provisions of Montana's Nondegradation Policy 75-5-303, MCA and ARM 17.30.705 *et seq.*

Actual annual loads given in Table 4 were calculated and reported to the Department as part of the self-monitoring requirements. Years 2003-2005 are not included in the table. While a discharge was reported in June 2003, BOD₅ and TSS effluent values were not provided by the

permittee on the DMR. No discharge has occurred in 2004 and 2005. Data are presented back to 1996 because nutrient sampling was only completed in 1996-1998.

Table 4: Calculated Allocated and Annual Average Loads								
Parameter	Allocated Load (lbs/day)	Annual Average Load ⁽¹⁾						
		(lbs/day)						
		1996	1997	1998	1999	2000	2001	2002
BOD ₅	9.5 ⁽²⁾	ND	3.0	3.4	4.6	3.5	3.8	2.9
TSS	32	ND	4.7	6.2	9.5	8.0	6.4	3.9
Total Nitrogen	7.0	ND	2.1	2.2	NA	NA	NA	NA
Total Phosphorus	1.8	ND	0.3	0.5	NA	NA	NA	NA
ND = No Discharge. NA = Not Applicable (1). See definitions in Part V. of permit. (2). The previous permit used 85% removal in the calculation of the BOD ₅ nondegradation limit (6.4 lbs/day). For this permit, it was recalculated using 30 mg/L.								

IV. Water-Quality Based Effluent Limits

a. Receiving Water

Discharge is to the South Fork McDonald Creek. The receiving water is a perennial stream and is part of the Box Elder watershed, 4th field Hydraulic Unit Code (HUC) 10040204, as defined by the United States Geological Survey (USGS). Current or usable flow data are lacking for the stream.

The previous permit used assumptions to augment actual flow data to determine a 7-day, 10-year low flow (7Q10) for the receiving water. The 7Q10 was assumed to be 0.5 cfs at the point of discharge. The 7Q10 was based on a few instantaneous measurements and assumed that the flow approaches zero flow, but does not cease. The dilution between the receiving water and discharge is 9:1, based on the above assumptions and the estimated design discharge flow (Table 1).

The water-use classification for South Fork McDonald Creek is C-3. Waters classified as C-3 are to be maintained suitable for bathing, swimming, and recreation and growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl, and furbearers. C-3 streams are naturally marginal for drinking, culinary and food processing purposes, agricultural, and industrial water supply (ARM 17.30.629(1)).

Upstream ambient nutrient concentrations were collected as part of the previous permit requirements. From 1996-1998, samples for nitrate plus nitrite as nitrogen, total ammonia as nitrogen, total Kjeldahl nitrogen (TKN), and total phosphorus were collected and analyzed. One

sample was reported as 0.1 mg/L total ammonia as nitrogen; the remainder were reported as less than 0.1 mg/L. Water pH and temperature were not collected with these data.

The South Fork McDonald Creek has not been listed on either the 1996 or 2004 Montana 303(d). A watershed restoration plan (TMDL) has not yet been prepared for the Box Elder watershed.

b. Proposed Water Quality-Based Effluent Limits

***Escherichia coli* (*E. coli*) Limits** – The permit will require pathogen monitoring, as indicated by the presence of *Escherichia coli* (*E. coli*). This requirement follows the recent change in Montana state standards, which have replaced the historic pathogen indicator species, fecal coliform bacteria, with *Escherichia coli* (*E. coli*), effective February 1, 2006.

The applicable standard for *E. coli* is:

- 1) April 1 through October 31, of each year, the geometric mean number of the microbial species *E. coli* must not exceed 126 colony forming units (cfu) per 100 milliliters (ml), nor are 10% of the total samples during any 30-day period to exceed 252 cfu per 100 ml (ARM 17.30.629(2)(a)(i)); and
- 2) November 1 through March 31, of each year, the mean number of *E. coli* organisms should not exceed 630 cfu per 100 ml and 10% of the samples during any 30-day period may not exceed 1,260 cfu per 100 ml (ARM 17.30.629(2)(a)(ii)).

The previous permit required fecal coliform bacteria analysis for effluent pathogen monitoring. For the period of record from May 1997 through May 2001, self-monitoring data fecal coliform bacteria results are erratic and vary between less than 5 colonies/100-mL to 4,800 colonies/100-mL. From June 2001 to present, however, the self-monitoring data are much lower and more consistent; reported monitoring results range from 9 to 180 colonies/100-mL. Discharge from May 2001 to present is seasonal to non-existent.

Pathogen limits will not be imposed by this permit. Due to the seasonality of the discharge, the facility should be allowing adequate retention time to all significant pathogen die-off. The current facility does not have the capacity to disinfect. *E. coli* limits must be met through any facility upgrade.

Total Residual Chlorine Limit – At this time, the permittee does not have the capacity to disinfect its wastewater effluent. Should chlorine be used for disinfection, water quality based effluent limit will be 0.011mg/l chlorine (DEQ, 2004).

Ammonia – The surface water quality standard for ammonia is pH and temperature dependent. Information for pH and water temperature are lacking for the South Fork McDonald Creek. The permittee will be required to monitor pH, temperature, and ammonia in the effluent. This data will be used to evaluate the need for ammonia limits in the next permit cycle.

Dissolved Oxygen – Freshwater aquatic life standards are characterized by the fishery (cold- or warm-water) and by the presence or absence of fish early life stages. Standards are further

defined based on a time frame and required DO levels. Classification states this waterbody is a warm-water fishery and all life stages are assumed to be present.

Typically, facilities that provide significant removal of organic material, as measured by BOD₅, do not require effluent limits for DO.

Whole Effluent Toxicity (WET) Limits - WET limits will not be required in this permit cycle due to the absence of significant industrial contributors to the system.

c. Mixing zone

This permit does not have water quality based limits that require a mixing zone. Pursuant to 17.30.500 *et seq.* the Department may require information or the permittee may request to determine a mixing zone.

The previous permit defined a mixing zone in South Fork McDonald Creek based on best professional judgment. The mixing zone was defined as being approximately 200 feet downstream from the discharge pipe (T 15N, R 23E, Section 21, SE ¼) or approximately two meander lengths.

V. Proposed Effluent Limits

Outfall 001 Proposed Effluent Limits				
	Concentration ⁽¹⁾ (mg/L)		Load (lb/day)	
Parameter	7-day Average	30-day Average	7-day Average	30-day Average
BOD ₅	45	30	14.3	9.5
TSS	135	100	42.8	31.7
pH (s.u.)	Within the range of 6.0 to 9.0			
(1) See Part V of the permit for explanation of terms.				

VI. Monitoring Requirements

Monitoring requirements in the permit are based on assumptions for a minor lagoon with a design discharge less than 0.1 mgd that operates with a controlled discharge. The design detention time is 162 days (Table 1). The permittee will monitor effluent discharge flow rate and quality at the V-notch weir located in the manhole north of the facility. Influent flow rate and samples will be collected from the influent manhole (Figure 1).

VII. Special Conditions

Special conditions in MPDES permits are designed to provide additional measures of control for the reduction of pollutants discharged to state waters. This permit will require tasks and deadlines met to meet permit conditions for proper Operation and Maintenance (O&M). ARM 17.30.1342 (8) requires that the permittee furnish to the Department, within a reasonable time, any information to determine compliance with this permit.

The following conditions must be met within the given timeframe:

Biosolids evaluation – Part III.E. of the MPDES permit states that “the permittee shall at all times properly operate and maintain all...systems of treatment and control which are installed...to achieve compliance with the conditions of the permit”. Observations made and information gathered during the January 2005 compliance inspection indicated that biosolids have accumulated and potentially have decreased the usable volume, thus compromising the operation of the facility. Operational control valves are inoperable and the facility is permanently operated in series. As a result, biosolid accumulation and decreased usable volume in the first cell are likely. Decreased usable volume reduces detention time and biological treatment.

A biosolids study was completed in August 2003; based on information from that study, along with any new information, the permittee shall evaluate the biosolids accumulation and establish a plan and schedule for biosolids handling. The permittee must submit a proposed plan and schedule, including all funding sources, to the Department as soon as possible but no later than twelve (12) months from the effective date of this permit. The permittee will have twelve (12) months after receiving Department review and approval to implement the plan. The permittee is responsible for notifying the Department, in writing, of the completion of any/all biosolids handling.

- i) Authority: ARM 17.30.1342(5) – “The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of this permit”; and 75-5-401(1)(a), MCA – “Rules shall be adopted governing application for permits to discharge sewage...including rules requiring the filing of plans and specification relating... (to the) operation of disposal systems”.
- ii) Schedule: No later than twelve (12) months after issuance, the permittee shall submit to the Department a copy of the biosolids study results and its plans for biosolids handling. Within twelve months of receiving Department approval, the permittee shall implement any and all recommended biosolids handling. Within 2 months of the completion of any/all biosolids handling, the permittee shall certify, in writing to the Department, project completeness.

- iii) The permittee must follow permitting requirements for biosolid removal presented in the Part I.E. of the MPDES permit.

In accordance with ARM 17.30.1342(11), all reports, plans or information submitted to the Department must be signed and certified in accordance with Part IV.G. of the permit and ARM 17.30.1323. Legible copies of these reports shall be submitted to the Department at the following address:

Montana Department of Environmental Quality
PCS Coordinator
Water Protection Bureau
P.O. Box 200901
Helena, MT 59620-0901

VIII. Other

Molloy Determination

On September 21, 2000, a U.S. District Judge issued an order stating that until all necessary total maximum daily loads (TMDLs) under Section 303(d) of the Clean Water Act are established for a particular water quality limited segment (WQLS), the State is not to issue any new permits or increases under the MPDES program. The order was issued in the lawsuit Friends of the Wild Swan v. U.S. EPA, et al. (CV 97-35-M-DWM), District of Montana and Missoula Division. The renewal of this permit does not conflict with Judge Molloy's order because this discharge does not a new or increased discharge under MPDES.

IX. Information Sources

40 CFR, Parts 122, 136, July 1, 2000.

DEQ. Circular WQB-7, Montana Numeric Water Quality Standards. February 2006.

DEQ. ARM (Administrative Rules of Montana) 17.30.601-670. Montana Surface Water Quality Standards. June 2004.

DEQ. ARM 17.30.701-717. Nondegradation of Water Quality. June 1996.

DEQ. ARM 17.30.1201-1209, 17.30.1301-1387. Montana Pollutant Discharge Elimination System (MPDES). March 2003.

EPA. Office of Water. Design Manual for Municipal Wastewater Stabilization Ponds, EPA 625-1-83-015. October 1983.

Mueller Engineering, Inc. Operation and Maintenance Manual for Town of Grass Range Sanitary Sewerage System. September 1973. (On-file with DEQ SRF).

MCA (Montana Code Annotated), Title 75-5-101 *et seq.*, “Montana Water Quality Act”.
2003.

NRIS. Website address: <http://nris.state.mt.us/topofinder2/default.asp>, accessed January
20, 2005.

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Date: March 2006

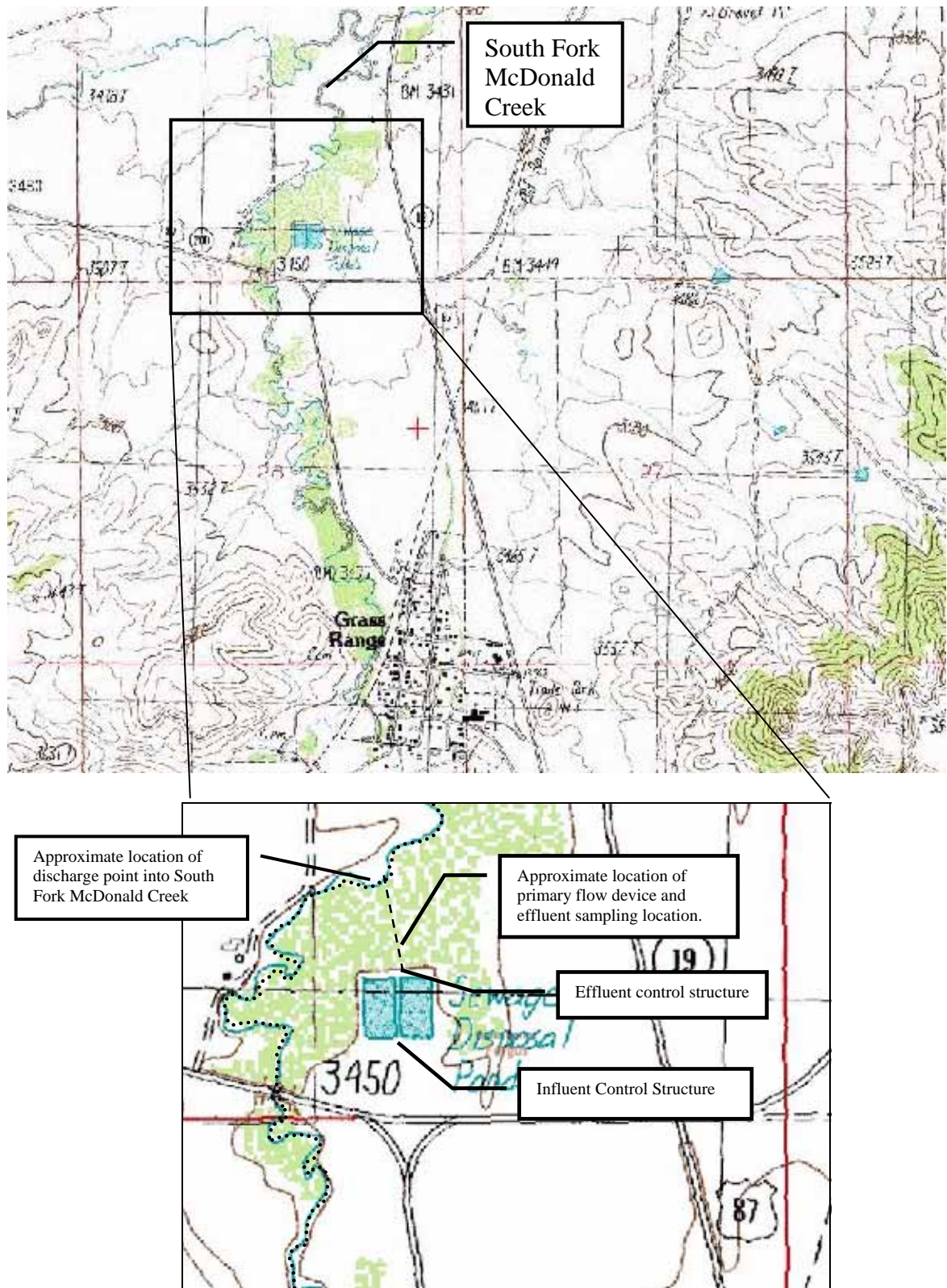


Figure 1: Site map and layout of facility (USGS, 2005)